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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/936,111

01/16/2002

Gianni Collina

US 18026

9340

7590

11/04/2004

Joanne W Patterson  
Bassel North America Inc  
912 Appleton Road  
Elkton, MD 21921

EXAMINER

LU, C CAIXIA

ART UNIT

PAPER NUMBER

1713

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/936,111

Applicant(s)

COLLINA ET AL.

Examiner

Caixia Lu

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.  
4a) Of the above claim(s) 16-40 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-40 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Request for Continued Examination*

1. The request for continued examination (RCE) under 37 C.F.R. § 1.114 is acceptable. An action on the RCE follows.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly added limitation of "the amount of polymer produced in the first polymerization stage (I) is between 10 and 99% by weight relative to the total amount of polymer produced in stages (I) and (III)" is not fully supported by the specification. The range of "10-90%" rather than "10-99%" is supported in specification in the indicated section. The newly added limitation contains new matter.
5. Claims 1-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In the multistage of Example 1 of pages 29-30, 100 g of porous deactivated polypropylene is used in the second polymerization stage to produce 94 g of polymer composition. Based on the disclosure, the total amount of polymers from both polymerization stages is 94 g which is less than the 100 g of polymer from the first polymerization stage alone. Thus, one must conclude that Example 1 fails to enable the instant claims because the total amount of polymers from both polymerization stages must be at least 10 wt.% more than the amount of polymer produced in the first polymerization stage alone.

***Claim Rejections - 35 USC § 103***

6. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Govoni et al. (US 5,589,549) in view of Canich et al. (US 6,194,341) and .

The instant claims are directed to a two-stage olefin polymerization processes comprising preparing a porous polyolefin with greater than 5% of porosity in the presence of a nonmetallocene catalyst such as titanium or vanadium catalyst, contacting the polymer from the porous polyolefin with a late transition metal complex catalyst, and then conducting the second stage polymerization, wherein the amount of polymer produced in the first polymerization stage is between 10-99 wt% based on the total amount of polymers from both stages.

Govoni teaches that the multistage process can work with different catalyst system in the various stages to provide polyolefins with wide ranges of olefinic polymer composition.

Govoni expressly teaches a two-stage process for the polymerization of olefins (col. 2, line 58 to col. 3, line 23; col. 4, lines 8-17; and Examples 1-5). In the first stage, a titanium or vanadium catalyst is used to produce a porous polyolefin with porosity of greater than 5%. The porous polyolefin is contact with a metallocene catalyst and then the second stage polymerization is conducted.

Govoni teaches all of the limitations of the instant claims except that the catalyst used in the second stage polymerization is metallocene rather than a late transition metal complex of the instant claims.

Canich teaches a process for preparation of multimodal polyolefins in the presence of a catalyst mixture comprising a late transition metal and a Ziegler catalyst to provide a polyolefin with controlled molecular weight distribution and composition distribution (col. 2, line 53 to col. 4, line 15; and col. 16, lines 29-34).

While the polymerization processes of both Govoni and Canich produce polyolefins with multimodal composition and molecular weight distributions, Govoni's multistage polymerization process allows individual control of the fractions of polyolefins prepared under each of the catalysts, and, thus, provide more freedom for tailoring the final polymer compositions.

Govoni and Canich are analogous because they both are from the same area of endeavor of polyolefins with multimodal compositions and molecular distributions.

Thus, it would have been obvious to a skilled artisan at the time the invention was made to employ Canich's late transition metal complex to Govoni's two-stage polymerization process to provide better tailored polyolefin compositions with multimodal compositions and molecular weight distributions and in the absence of showing of criticality and unexpected result.

***Response to Arguments***

7. Applicant's arguments with respect to the rejected claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.



Caixia Lu, Ph. D.  
Primary Examiner  
Art Unit 1713